

## brook-map.xls1HUBBARD BROOK MAP-STATION DATA

	A	B	C	D
1	Station Number	Lithologies	Foliation Orientations	Notes
2				
3	1	Basalt 10%		
4				
5	2	Schist 100%		
6				
7	3	Schist 100%	N15E, 79NW	
8				
9	4	Schist		
10		Granite		
11		pegmatite(small		
12		dike)		
13				
14	5	Schist 100%	N6E, 84SE	
15				
16	6	Schist 100%	N16W, 86NE	Highly micaceous schist; biotite and muscovite. Weathering color is gray to rusty red.
17				
18				
19	7	Schist 100%	N39E, 72NW	Quartz- mica dominated schist, weathers so that quartz is retained on surface
20			N80E, 76W	
21			N44E, 72NW	
22				
23	8	Schist 100%	N40E, 66NW	Highly micaceous schist; biotite and muscovite
24			N44E, 74NW	
25				
26	9	Schist 100%	N69E, 77NW	Lots of biotite, weathers gray to rusty. Southern exposure is much more coarse-grained contains more quartz, and is less foliated
27				
28				
29	10	Schist	N65E, 86SE	Granular schist, weathers gray to rusty, lots of quartz, little biotite, possible phlogopite
30		Granite?		
31				
32	11	Schist 86%	N44E,90	Schist is well foliated and micaceous, lots of biotite and muscovite
33		Granite 10%	N19E, 90	
34		Pegmatite 4%		
35				
36	12	Schist 90%	N41E, 84SE	Sharp contact with an orientation of N83E, 64S; schist weathers rust-gray
37		Granite 10%		
38		Pegmatite less		
39		than 1%		
40				
41	13	Granite 90%		Schist occurs as an inclusion within granite
42		Schist less than		
43		10%		
44				
45	14	Granite 100%		intrusion looks as if it has incorporated much of the country rock
46				
47	15	Schist 80%	N61E, 79NW	
48		Amphibolite? 20%		
49				
50				
51	16	Schist 100%	N46E, 88NW	
52			N53E, 90	
53				
54	17	Schist 100%	N44E, 84NW	western exposure is gniessic

	A	B	C	D
1	Station Number	Lithologies	Foliation Orientations	Notes
55			N40E, 83NW	
56			N39E, 83SE	
57				
58	18	Schist 40%	N46E, 79NW	graded, diffuse contact
59		Granite 50%		
60		Pegmatite 10%		
61		or less		
62				
63	19	Schist 75%	N8W, 82E	Contact interfingers variably and in between fractures(?), foliation
64		Granite 20%	N16E, 90	is imposed into tight low amplitude folds. Development of folding
65		Pegmatite 5%	N64E, 86NW	is variable across outcrop. Many of the folds are about .05m
66			N25E, 70SE	amplitude, with a wavelength of .2m. Axial trace pitches 62
67			N27E, 88SE	degrees, N52E. One contact plane strikes N15E, with a dip of 45
68				degrees to the SE.
69				
70	20	Schist 91%	N46E, 27NW	Orientation of pegmatite dikes are :
71		Granite 8%	N31E, 49NW	furthest North N80W (.06m wide)
72		Pegmatite less	N31E, 42NW	
73		than 1%		furthest South N83W, .02m wide)
74				
75	21	Schist	N49E, 74NW	Granite dike is oriented N85W, 6S and is .05m thick
76		Granite	N23W, 82SW	
77			N55E, 80NW	
78				
79	22	Schist 98%		
80		Pegmatite 2%		Hydrothermal alteration present. Pegmatite occurs as a dike.43m
81				wide, which changes orientation in exposure from an apparent dip
82				61 degrees to the west to subvertical in upper portion of outcrop.
83				
84	23	Schist 90%	N33E, 83SE	Pegmatite occurs as pods.
85		Pegmatite less	N41E, 81SE	
86		than 10%	N35E, 82SE	
87				
88	24	Granite 100%		
89				
90	25	Granite 50%	N24E, 87NW	Tectonized biotite-granite present in north section of outcrop
91		Schist 30%	N28E, 90	
92		Tectonized Granite		
93		20%		
94		Pegmatite less		
95		than 1%, but present		
96				
97	26	Schist 100%		
98				
99	27	Schist 98%	N45E, 74SE	
100		Pegmatite 2%		
101				
102	28	Granite	N11E, 41SE	Mafic dike is orientated N23E, 80NW and is .1m thick. The
103		Schist		Tectonized granite shows a very distinct fabric with an orientation
104		Pegmatite 4%		of N46E, 58NW. Relationship of units is complex and contact
105		Tectonized granite		between schist and granite is gradational, but discernable within
106		Basalt		about 2". Percentage values of schist and granite are uncertain but
107				there appears to be more granite. Pegmatite appears as pods and

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108				dikes?
109				
110	29	Granite		Minor amount of schist. Granite is tectonized and is light colored.
111		Schist		
112				
113	30	Schist	N38E, 85SE	
114				
115	31	Schist		Composition is highly variable.
116				
117	32	Schist	N18W, 56NE	Lots of pegmatite present at station 32. Pegmatite dike is oriented N46E, 87SE and then bifurcates; pegmatite may have been emplaced in a fracture.
118		Pegmatite (lots of pegmatite)		
119				
120				
121	33	Pegmatite		Schist is very granular.
122		Schist		
123				
124	34	Tectonized granite		
125				
126	35	Tectonized granite		
127				
128	36	Schist	N67W, 90	Micaceous schist
129				
130	37	Schist 100%	N61W, 80NE	
131				
132	38	Schist 100%	N69W, 87SW	Micaceous schist
133				
134	39	Schist	N64W, 66NE	Weathers with a lot of quartz on surface
135		Tectonized granite?	N71W, 87NE	
136				
137				
138	40	Schist	N61W, 82NE	
139				
140	41	Granite	N36W, 83NE	Micaceous to granular-granitic schist present
141		Schist		
142				
143	42	Schist	N72E, 90	Micaceous schist that weathers-out with quartz on surface.
144			N76E, 90	
145				
146	43	Schist 59%	N50W, 79NE	
147		Granite 40%	N58W, 87NE	
148		Pegmatite less than 1%	N87W no control on dip	
149			N27W, 81NE	
150				
151	44	Granite 100%		weathers gray
152				
153	45	Schist	N75E, 88NW	Pin-striped schist, weathers a rusty-red, lots of quartz
154			N53E, 81NW	
155			N61E, no dip control	
156				
157	46	Schist	N14W, 54NE	Well pin-striped schist, weathers rusty-red
158			N37W, 70NE	
159			N29W, 66NE	
160				

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161	47	Schist		.13m thick quartzite?? or granite layer in schist
162		Granite?		
163				
164	48	Schist	N37W, 76SW	
165				
166	49	Schist	N4E, 79E	Nicely exposed pygmatic fold exposed in foliation
167				
168	50	Granite ? or Gniess??		
169				
170	51	Schist	N47W, 76SW	Micaceous, pin-striped schist, well foliated
171				
172	52	Granite 25%		Northern quarter of outcrop is granite
173		Schist 75%		
174				
175	53	Gniessic schist	N20E, 54SE	
176		or Granite(??)		
177				
178	54	Gniessic schist	N11W, 49NE	Quartz dike cutting up foliation with a strike of due north and
179		or Granite(??)		north and a dip of 42 degrees to the east
180				
181	55	Gneissic Schist	N61W, 78SW	Feldsic biotite gneiss; small pegmatite dike cutting across foliation,
182				roughly orientated N88W, 57N
183				
184	56	Schist	N57W, 55NE	High biotite content schist
185				
186	57	Gniessic schist		Well jointed rock; breaks with a lot of sharp clean fractures, where
187				the minerals have been reworked at the surface, quartz
188				mineralization??
189				
190	58	Schist	N45E, 54SE	foliated schist
191				
192	59	Schist	N11E, 26SE	
193				
194	60	Schist	N7E, 11E	
195				
196	61	Gniessic Schist		
197				
198	62	Schist		No muscovite present, strong fabric developed
199				
200	63	Schist	N67E, 75SE	
201			N69E, 68SE	
202				
203	64	Schist	N86E, 82N	
204				
205	65	Schist	N80E, 81NW	small folds seen outlined by foliarion
206		Pegmatite in	N74E, 69NW	
207		minor amounts	N53E, 79NW	
208				
209	66	schist		large pavement
210				
211	67	schist	N59E, 71SE	
212				
213	68	Schist		

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214		Pegmatite in minor amounts		
215				
216	69	Schist		
217				
218	70	Schist		Poorly foliated, coarse grained schist
219				
220	71	Schist	N10E, 57SE	
221				
222	72	Schist 100%	N74E, 82NW	
223			N71E, 79SE	
224				
225	73	Schist or Granite??		No muscovite present, but weathers in bulbous mounds showing no foliation
226				
227				
228	74	Schist		foliated, but still granular
229				
230	75	Schist 100%	N81E, no dip control	
231				
232	76	Schist	N65E, 77SE	
233				
234	77	Schist		Very coarse grained schist??
235				
236	78	Schist	N25E, 74NW	
237			N21E, 63NW	
238			N21E, 74NW	
239				
240	79	Schist or Granite??		Rock definitely has a definite fabric to it (tectonized or foliation??)
241				
242	80	Schist		
243				
244	81	Tectonized	N32W, 74SW	Rock contains abundant biotite and muscovite
245		Granite(?)	N36W, 79SW	
246				
247	81	Schist	N75E, 75NW	pin-striped highly micaceous schist
248			N78E, 56NW	***This is a second station labled station 81
249				
250	82	Schist		Difuse boundaries and relationships between units.
251		Granite		
252		Pegmatite		
253				
254	83	Granite		Lots of Pegmatite around
255		Pegmatite		
256		Schist		
257				
258	84	Schist	N69E, 86NW	
259			N67E, 73NW	
260				
261	85	Very Granular schist??		
262		or Granite??		
263				
264	86	Gniessic granular schist??		Nice angular fractures, light gray color to rock from mix of quartz, biotite and feldspar
265				
266				

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1	Station Number	Lithologies	Foliation Orientations	Notes
267	87	Schist		Granular Schist
268				
269	88	Schist		pin-striped schist
270				
271	89	Granite		
272				
273	90	Granite		Very large vertical to overhanging wall of granite
274				
275	91	Granite		2.5' thick granite dike cutting granular schist?, traceable for 30' or more
276		Granular Schist(?)		
277				
278	92	Granite		
279				
280	93	Schist	N34E, no dip control	Schist cut by blebs and fingers of granite, granite roughly trending N79E
281		Granite		
282				
283	94	Granite 25%		Pegmatite dike has an apparent thickness of .8m thick and trends N75E and appears to be shallow dipping to the SE.
284		Schist 65%		Glacial striations are oriented:
285		Pegmatite 10%		
286				
287				
288				
289				
290				
291				
292				
293	95	Granular Schist		Unfoliated to poorly foliated metamorphics (looks kind of like quartzite in fresh fractured surface). Pegmatite dike has an apparent thickness of .14m, and is roughly trending N82E, 52S.
294		97%		Glacial striations trending
295		Pegmatite		
296		3%		
297				
298				
299				
300				
301				
302				Ptygmatic folds of migmatite in schist, which are clearly cut by pegmatite dikes.
303				
304				
305	96	Granite 45%	N34E, 88SE	Granite has intruded as fingers, dikes, and blebs in a very complex manner; Granite occurs in foliation as convoluted folds and stringers. Migmatite is present and is cut by granite. Schist is hydrothermally altered, especially on southern end, of outcrop.
306		Pegmatite 5%	N20E, 86SE	
307		Schist 45%		
308				
309				
310	97	Schist		Coarse grained schist, rusty-red weathering color; Quartz rich, biotite, muscovite schist; large quartz grains.
311				
312				
313	98	Schist 100%		
314				
315	99	Schist 100%	N3E, 75W	Schist is poorly foliated.
316			N0, 71W	
317			N0, 68W	
318				
319	100	Schist	N31E, 74NW	Grainy schist, yellow-red weathering color; lots of biotite and

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320				and quartz, plus feldspar?
321				
322	101	Schist	N31E, 58NW	Well foliated schist; biotite, feldspar?, quartz; rock has a red color.
323				
324	102	Schist	N63E, 62NW	Black, high biotite content schist. Little black veins cutting schist.
325			N48E, 57NW	
326				
327	103	Schist	N34E, 86SE	Light colored schist, weathers a grungy brown color. Muscovite predominates along with sillimanite(?) that are vareously oriented within foliation.
328				
329				
330				
331	104	Schist	N40E, 69NW	Brown stained schist with sillimanite on surface. Clean black
332			N32E, 62NW	(biotite) and white (quartz and feldspar(?)) inside weathering rind.
333			N34E, 81NW	
334				
335	105	Schist	N34E, 64NW	Well foliated schist; biotite, feldspar, quartz, and sillimanite present. Schist is almost a gneiss; seperation of constituent minerals is significant in places.
336				
337				
338				
339	106	Schist		Coarse grained schist.
340				
341	107	Schist		Granular schist; lots of sharp fractures which have weathered to
342		Pegmatite		rounded edges. Small pegmatite dike about 1.5" thick, traceable for
343				approximately 9'.
344				
345	108	Schist		Brown grungy weathering color; schist is highly micaceous;
346				muscovite and biotite.
347				
348	109	Schist		Biotite, K-feldspar(?), and quartz
349				
350	110	Schist	N39E, 64NW	Gniessic schist, weathed to a grungy brown; biotite, K-feldspar, quartz layers clearly present
351				
352				
353	111	Schist	N28E, 77NW	Grungy brown weathering color
354			N28E, 76NW	
355				
356	112	Schist		Pin-striped granular schist; Qtz, feldspar, biotite
357				
358	113	Schist		Sillimanite, cummingtonite(?), muscovite and some biotite
359				
360	114	Schist		
361				
362	115	Schist	N19E, 84SE	
363				
364	116	Schist	N11E, 68SE	Schist has lots of muscovite, biotite, and quartz. Grungy
365		Pegmatite	N38E, 51SE	brown color to most of the outcrop. No definite pin-striping evident
366		Granite		evident. Appears as if the schist has undergone granitization or
367				anatexis(?) in regions. Schlieren and raft structures occur in
368				western most part of outcrop. Glacial striations:
369				
370				
371				
372				

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1	Station Number	Lithologies	Foliation Orientations	Notes
373				
374				
375				Pegmatite dike (are several) .16m thick with a rough orientation of
376				N58E, 63SE
377				Large granite dike (cuts through the middle of contact(?))
378				traceable for about 17'
379				with a rough orientation of
380				N42E, 80SE
381				
382	117	Schist 60%	N31E, 89SE	Grungy brown weathering color; pin-striping present. Clean
383		Granite 35%	N29E, 78SE	quartz-biotite layers inbetween high muscovite layers
384		Pegmatite 5%	N28E, 78SE	Schist is hydrothermally altered in places.
385				Schist is very well foliated.
386				Glacial striations:
387				
388				
389				
390				
391				
392				
393	118	Schist 90%	N28E, 88NW	Very well pin-striped schist; grungy brown weathering color
394		Granite 10%	N28E, 88NW	with muscovite
395		Pegmatites less	N28E, 88NW	Very high biotite quartz content; no feldspar apparent
396		than 1%		Lots of "S" verging folds present, "Z" folds present but "s" folds
397				predominate and occur on a variety of scales
398				
399	119	Schist 90%		Schist is fairly granular;migmatite structures present
400		Granite 10%		Pegmatite dike .15m thick trending N38E, dipping to the SE,
401		Pegmatites less		traceable for 25'
402		than 1%		Pegmatite dike .32m thick, trending N40E, uncertain dip, ends
403				diffusely
404				
405	120	Granite		Purple colored schist with convoluted folds; lacks distinct
406		Schist		pin-striping. Large granite dike which sends off fingers into
407				foliation, trends N23W, dips steeply to the SW
408				
409	121	Schist		Purple colored schist with convoluted folds; lacks distinct
410				pin-striping
411				
412	122	Schist	N69E, 90	Purple-blue schist
413			N59E, 90	Glacial striations:
414				
415				
416				Rock may appear purple due to the amount of garnet in the rock as
417				well as iron staining coming from weathering biotite
418				
419	123	Schist		purple schist
420				
421	124	Schist		Outcrop has 2 cement pilings placed on it. Purple schist.
422		Pegmatite??		Migmatite or pegmatite interfingering with schist, big crystals
423				of feldspar, biotite, and sillimanite; occurs on SE end of outcrop
424				especially. Sillimanite seems to be in schist.
425				

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426	125	Schist	N25E, 83SE	Large tourmaline(?) crystals along with .75" muscovite flakes.
427		Pegmatite		Large sillimanite crystals, also lots of biotite; Poor foliation development.
428				
429				
430	126	Schist	N26W, 88NE	Grungy looking rock, lacking pin-stiping, with pegmatite pod(?)
431		Pegmatite?	N22W, 88SW	layer(?) on bottom surface. Contains large books of muscovite, sillimanite, cummingtonite(?), biotite and large crystals of quartz
432				
433				
434	127	Schist		Similar to outcrop 126
435				
436	128	Schist	N26E, 83SE	Smooth, granular pin-striped schist
437				
438	129	Schist	N28E, 83SE	Schist is granular and pin-striped
439		Granite		
440				
441	130	Granite		Granite dike has a rough orientation of N14E, 42SE
442		Pegmatite		
443		Schist		
444				
445	131	Schist	N49W, 89SW	
446				
447	132	Schist	N32E, 76SE	
448		Granite		
449				
450	133	Schist		Hexagonal tourmaline crystals weathering out of rock
451		Pegmatite		Grungy brown color to the whole outcrop, thin black veins present
452				
453				
454	134	Schist 100%		Schist looks like a sandstone on weathered surfaces; thin .25" (est) thick black veins or dikes cutting across(?) outcrop or forming near the surface; they look like manganese stains or veins.
455				
456				
457				
458	135	Schist		
459				
460	136	Schist		Poorly foliated schist
461				
462	137	Schist 100%		
463				
464	138	Schist		Schist with large blue-quartz zone
465				
466	139	Pegmatite		
467		Schist		
468				
469	140	Schist 100%		
470				
471	141	Schist		
472				
473	142	Decision was made to draw the contact inbetween station 117 and 142, which is the SE and NW ends of the contact with a granite intrusion inbetween the two, the decision was made primarily by the reddened iron staining of the NW end, and a lack of the quartz biotite thick cocotiles in SE end, and an increase in muscovite as well as a fining of foliation in the NW end; rock on NW end is still what you could call pin-striped schist, but segregation of mineral components has occurred less and bands are not as wide.		
474				
475				
476				
477				
478				

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479	143	Schist	N41E, 78SE	Highly convoluted and pygmatic folds developed in schist; folds are developed on a whole range of amplitudes and wavelengths. Lots of biotite present here; pin-striping has not developed across the outcrop, instead foliation is massive and foliation is either thrown into whisps or highly contorted folds.
480			N40E, 84SE	
481			N38E, 8SE	
482				
483				
484				
485	144	Schist	N45E, 88NW	Pin-striped schist with iron staining; sillimanite, present in large crystals, and books of muscovite up to 2" long and 1" wide
486				
487				
488	145	Schist	N38W, 84SW	Blocky layered schist.
489			N39W, 86SW	
490				
491	146	Schist		
492				
493	147	Schist	N34E, 81NW	Highly convoluted folds to pin-striped schist; bluish-tan color which grades into rusty red. Grainy sections with mica books in them.
494				
495				
496				
497	148	Schist		
498				Red-rusty to bluish tan weathering colors; lots of sillimanite and muscovite.
499				
500	149	Schist		Down in gorge can often look alot like Lower Rangeley. Convoluted folds often pass off into whisps, reddish-purple weathering color.
501				
502				
503				
504	150	Schist		
505				Purple -red weathered schist
506	151	Schist	N57E, 80SE	Massive hornblende rich layers which break in sharp angles Large pegmatite dike 1.07m thick, with an orientation of N22W, 12NE: Quartz muscovite rich Large Mafic dike with plagioclase phenocrysts; 3.57m thick, oriented N42E, 89SE
507		Amphibolite?		
508		Basalt		
509		Pegmatite		
510				
511				
512	152	Schist?		Quartzite layers present, breaks in very sharp angular blocks and is coated with iron staining; occurs in rock-slide-chute 20 yards east of diabase(?) dike (mylonite??)
513				
514				
515				
516	153	Amphibole rich schist? or amphibolite?		
517		Pegmatite		
518				
519				
520	154	Schist	N5E, 90	
521				
522	155	Schist(amphibolite)		Hornblende, biotite rich
523				
524	156	Schist		Highly granular quartz rich schist
525				
526	157	Pegmatite 40%		Tectonized granite(?) or granular schist? Looks more like granite but muscovite is not evident.
527		Granite(?) 60%		
528				
529	158	Schist		Biotite-quartz schist, grainy like salt or sugar, almost homogeneous.
530				
531				

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532	159	Schist		Red stained schist with convoluted to wispy foliation
533				What I feel is typical Upper Rangely
534				
535	160	Schist		Foliation thrown into chevron folds in some
536		Pegmatite		places; pegmatite dikes and pods penetrating schist.
537				Pegmatite dike: .54m thick, orientation of N44E, gently dipping to
538				the south
539				
540	161	Schist		Coarse grained high muscovite content rock; may be pegmatite
541		Pegmatite		interfingering with schist, the relationship was complex and
542				uncertain. The schist appears to be inter-layered
543				with the pegmatite. Red stain over the outcrop.
544				
545	162	Schist		High quartz feldspar component, does not weather out
546				rustily.Lower Rangely?
547				
548	163	Pegmatite		
549		Schist		Large pegmatite dike, Upper Rangely??
550				
551	164	Schist		Rusty red weathering color; some samples have blue tan color
552				inside weathering rind.
553				
554	165	Schist		
555				
556	166	Schist		Rock outcrops are nearly continuous between 161 and 166.
557				Schist is well covered with red stain.
558				
559	167	Schist		Grainy, biotite quartz schist; Lower Rangely?
560				
561	168	Schist		Lower Rangely?
562				
563	169	Schist 100%	N12E, 81SE	Rock has a rusty red color to it, and contains several calc-silicate
564				pods in it. Has well defined biotite quartz separation and foliation
565				of Lower Rangely; Upper Rangely?
566				
567	170	Schist		Red iron staining covers outcrop.
568				
569	171	Schist		
570				
571	172	Schist		
572				
573	173	Schist		
574				
575	174	Schist		
576				
577	175	Schist		
578				
579	176	Schist		
580				
581	177	Schist	N9W, 73NE	
582			N3W, 88W	
583				
584	178	Schist	N23E, 86SE	

	A	B	C	D
1	Station Number	Lithologies	Foliation Orientations	Notes
585				
586	179	Schist		Coarse grained foliation lots of quartz.
587				
588	180	Schist		Has weathered to a dark brown
589				
590	181	Schist		Has weathered to a dark brown
591				
592	182	Schist		Puple-brown weathering color
593				
594	183	Schist		
595				
596	184	Schist		
597				
598	185	Deleted station.....		
599				
600	186	Schist		Schist with high
601				
602	*****	*****	LO 11-3-94	*****
603	187		N34E,58SE	Lower Rangely (??) Samples 187.1, 187.2 taken. Red-gray stained outcrop high biotite, feldspar, quartz, muscovite (?) content.
604				
605				
606	188			Very similar rock to 187, lots of biotite thinly foliated with quartz and feldspar which is often stained red.
607				
608				
609	189		N32E, 73SE	Lots of sillimanite exposed on surface, well developed foliation, pin-striped, with a red-gray weathering color. Lower Rangely (?) Sample 189 taken.
610				
611				
612	190	Schist		Pin-striped schist with pegmatite (?) -sample 190, high muscovite content to schist. Weathering color varies from a tan to a gray to a purple-red.
613				
614				
615	191	Schist	N30E,58SE	Purple-red weathering color contains layers of granular tan-brown layers within unit (Sample 191) with sugary-grainy texture.
616			N30E,73SE	
617				
618	192	Schist		Finely pin-striped schist weathers a gray color, and into rounded massive looking knobs.
619				
620				
621	193	Schist		Grungy brown looking schist. Sample 193 collected (only possibly out of place).
622				
623				
624	194	Schist		Tan-blue weathered schist. Schist contains lots of muscovite-sillimanite-quartz. (Slight possibility of being out of place).
625				
626				
627	195			Lower Rangely (?) layers of biotite-quartz and feldspar muscovite (?). Produces little weathering color and weathering rind.
628				
629				
630	196	Schist	N27E,77NW	A steep slope of heavily covered schist, weathers a purple-red color. Sample 196 (good control)
631				
632				
633	197		N26E,82SE	Sample 197 taken, lots of sillimanite, somewhat of a splotchy texture to rock. Foliation is poorly defined. Size: 4m x 1.7m. Aperature: .35mm. Fracture disappears into soil and rock (not traceable).
634				
635				
636				
637	198	Schist		Schist, weathered to a gray color; biotite, feldspar, quartz.

	A	B	C	D
1	Station Number	Lithologies	Foliation Orientations	Notes
638				
639				
640	199	Schist		Well pin-striped schist weather to a dull reddish-gray.
641				
642				
643	200		N21E,85SE	Outcrop occurs between station 129 and 128. Best I can put the contact in is in between 130 and 131, but the decision is very arbitrary, I also cannot determine for sure whether all of the ridge in between Paradise Brook and the brook that runs by the Forest Service station is Lower Rangely, zones of the ridge look like Upper Rangely, the distinction is vague on the ridge. Lower Rangely (?) outcrop occurs as a couple of small benches with faces about 5' high. Sample 201 collected. Rock weathers to a purple with a few white specks. No significant rusty weathering or pin-striping. Outcrop is questionable.
644				
645				
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648	201	Schist 100%		
649				
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652				
653	202	Schist	N49E,72NW	Rock weathers to a blue-purple-black color. Schist: biotite and muscovite (?) sillimanite (?). Does not have a rusty weathering coat to it. Sample 202 collected. Lower Rangely? Could be out of place--but occurs as several large (15' est.) high faces in steep slope.
654				
655				
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658	203	Schist		Purple-blue-gray schist.
659				
660				
661	204	Schist		Purple-blue-gray schist.
662				
663				
664	205	Schist 100%		Schist (biotite, feldspar, quartz) (100%) blue-gray weathering color, poorly developed foliation, no red rusty color. Lower Rangely
665				
666				
667	206	Schist	N43E,82SE	Weathers to a blue-gray color. No weathering stain present. Schist is composed of almost equal parts biotite and muscovite, minor feldspar and quartz. Well foliated. Sample taken.
668				
669				
670				
671	207	Schist	N1E,64E (poor control) N4E,61E (poor control)	Same description for schist as 206. Fracture face: N68W,68SW, covered, so can't trace where fracture goes. Size: 32m x 2.4m. No roughness recorded because face has been weathered so much that more resistant crystals stand out in ridges (especially sillimanite ?) flush with face with deep grooves where easily weathered minerals used to be. Questionable outcrop well pin-striped schist blue-gray weathering color.
672				
673				
674				
675				
676				
677	208	Schist		
678				
679	209	Schist	N30E,90	Samples 209 taken (2 of them). Schist (sillimanite, biotite, quartz, feldspar (?)) varies to a tan-blue rock to a grungy red. Weathers gray over most of outcrop, hints at red but no dominant rusty weathering cover, and white speckled in places. Lower Rangely (?)
680				
681				
682				
683				
684	210	Schist		Slight rusty red iron. Upper or lower Rangely schist. Staining, wispy appearance to foliation but dominated by gray weathering color.
685				
686				
687				
688	211	Schist 98%	N37E,86SE	Large outcrop in Hubbard Brook. Outcrop is a pin-striped schist, pin-stripes are well developed but the majority of the rock is matrix (non-striped).
689		Granite >1%	N30E,85SE	

	A	B	C	D
1	Station Number	Lithologies	Foliation Orientations	Notes
690	212	Pegmatite >1%	N46E,90	The schist weathers to a purple rust color. A few stringers of pegmatite, and a possible finger of
691				
692				
693				
694				
695				
696				
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698				
699	213	Schist	N29E,68NW	Upper Rangely outcrop in the middle of Hubbard Brook. Whispy texture developed in foliation, little iron staining present, more a blue-tan color.
700				
701				
702	214		N30E,82SE N21E,86SE	On north bank of Hubbard Brook. Gray-red weathered schist. Upper Rangely. Lots of Garnet. Biotite-quartz-feldspar schist.
703				
704	215		N6E,86NW	Questionable outcrop. Upper Rangely. Little rusty staining, no apparent pin-striping. Sample 215 taken.
705				
706				
707	216		N27E,90 N31E,74NW	In middle of Hubbard Brook. Red rusty-purple stained. Upper Rangely. Foliation orientation appears to be variable but measured N27E,90; N31E,74NW.
708				
709				
710	217		N39E,90	Questionable outcrop. Red rusty-purple stained. Upper Rangely.
711				
712				
713	218			Questionable outcrop of Upper Rangely.
714				
715				
716	219		N27E,86SE N30E,84 SE	Big outcrop as a cliff face shich juts slightly out into Hubbard Brook. Sample 219 taken. Fracture face--Orientation: N66W,65SW, Aperature: .13mm, Size: 1m (wide) x 2.7m. Disappears into rock, but ends blind at the top.
717				
718				
719	220		N47E,82SE N51E,87SE N49E,83SE	Outcrop of Upper Rangely at confluence of Falls and Hubbard Brooks. Weathering color is a light tan, to a purple, to rusty red spots, large garnet coticles present, no pin-striping is evident. Sample 220 taken. Although foliation does appear to locally bend north on east end.
720				
721				
722	221		N73E,75SE	Rusty red to purple. Upper Rangely. Lots of biotite, sillimanite present. A very little quartz and feldspar (??) Questionably in place.
723				
724				
725	222	Pegmatite	N20E,90	Questionably in place. Rusty red upper Rangely with blue crystals weathering out. Sample 222.1. Pegmatite present (small % of outcrop). Sample 222.2.
726				
727				
728	223	Schist Quartz	N30E,88SE N25E,79SE	First outcrop coming up Cascade Brook, forms a pool below a waterfall. Outcrop has a rusty red stain in places most of the outcrop is a quartz-rich massive rock with a little feldspar (?) present and a very little muscovite. In more micaceous zones the rust staining is well developed where the quartz rich zones are, the weathering effects are not visible and it looks like a quartzite or granite on the surface, the micaceous schist interfingers with the quartz rich zone gradationalllly or in no distinct manner. The quartz rich zones may be quartzite (the rock is a meta-psammite) or highly tectonized zones of granite (Concord Granite?) No large feldspar phenocrysts are seen. One large white feldspar phenocryst found in quartz rich zone in the middle of Cascade Brook. Foliation orientations (poorly constrained).
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	A	B	C	D
1	Station Number	Lithologies	Foliation Orientations	Notes
743				
744	224	Micaceous Schist	N20E,90	Little box canyon in Cascade Brook, more quartz rich meta psammities, mylonitized pegmatites (?) and micaceous schist layers. (High biotite content to the micaceous schist). Samples 224, 224, 224.3 (mylonitized Kinsman) taken.
745		Pegmatite	N10E,90	
746			N2E,87SE	
747				
748				
749	225	Schist	N14E,subvertical	Next station up Cascade Brook, beautifully pin-striped schist, quartz layers, and quartzite (?) with garnets. Sample 225.1 - Kinsman, 225.2 - Kinsman, 225.3 - pinstriped schist, 225.4 - quartzite (?) with garnets. Possibly paleo-bedding present. Foliation orientation (rough). Orientation: (very roughly) N62W,26NE.
750		Granite		
751		Quartzite		
752				
753				
754				
755	226	Schist		More schist little rusty red iron staining, looks a lot like what we had been calling Lower Rangely. (Outcrop occurs at the top of Cascades). Sample 226 taken.
756				
757				
758				
759	227			More meta-Kinsman. Sample 227 taken.
760				
761	228	Schist		Schist is all micaceous. No quartz rich sections present. Fair to little rusty red iron staining. Upper or Lower Rangely (??). Foliation orientations are difficult to obtain because rock is worn smooth.
762				
763				
764				
765	229	Schist	N42E,75SE	Micaceous, high biotite content schist. Foliation orientation: (fair control).
766				
767	230	Schist	N78E,73SE	Sample aken. Schist. Also schist with lots of sillimanite present.
768				
769	231	Schist		Kinsman (?) interlayered with schist, possibly occurs as a sill. Sample 231 taken.
770				
771				
772	232	Kinsman		More Kinsman (?) occuring as a little step in Cascade Brook. Sample taken.
773				
774	233	Schist		(Outcrop located where Cascade Brook flattens out a bit). Gray-blue to black schist. Sample 233 taken. Very weathered glacial striations (?) S68E, S64E.
775				
776				
777	234	Schist		Micaceous, biotite dominated schist with a good deal of garnet.
778				
779	235		N36E,56SE	Outcrop is questionable. Sample 235 taken.
780				
781	236	Schist 90%		Outcrop which forms large waterfallo. Most of the outcrop is schist but fingers of pegmatite (?) or Kinsman (?) are showing. Samples 236.1, 236.2, 236.3 taken. Contains large quartz, Muscovite, Feldspar and tourmaline crystals.
782		Pegmatite-Kinsman 10%		
783				
784				
785				
786	237	Schist	N66E,79NW	Finely foliated schist.
787			N59E,81SE	
788	238	Schist		Fine grained, quartz-biotite schist with a gneissic texture. Sample 238 taken.
789				
790	239	Pegmatite		Majority of outcrop is pegmatite (?)/Kinsman (?). Sample 239 taken.
791		Kinsman		
792				
793	240	Schist		More pegmatite/Kinsman bounded by schist. Both 239 and 240 may have been intruded as a couple of sub-horizontal sills (?). With orientation (very
794		Pegmatite		

	A	B	C	D
1	Station Number	Lithologies	Foliation Orientations	Notes
795		Kinsman		Loosely): (sub-horizontal) N79W,10NE (?) and don't appear to be very thick.
796				
797				
798	241	Schist	N53E,no dip control	Wier on Cascade Brook. Nicely exposed schist. Glacial Striations: S38E, S43E, S36E, S42 E, S42E. A bit calc-silicate boudin exposed in Brook.
799				More glacial striations (on eastern side of Brook): S45E, S47E, and down just a ways, S43E, S41E. Foliation orientations: N55E, N54E, steeply dipping. Outcrop is entirely schist, looks a lot like Lower Rangely (??) only small pods of pegmatite present.
800				
801				
802				
803				
804				
805	242	Schist		Finger of Kinsman against schist (?), tectonized granite with garnets (?) or gneissic schist (?). Samples 242.1, 242.2.
806		Kinsman		
807		Granite		
808				
809	243	Schist	N62E,86SE	Black schist with pin-stripes of white quartz. Sample 243 schist (??). Pegmatite dike .19m thick N50W, dipping to the SW.
810				
811				
812	244			(First waterfall up from wier). Sample 244 taken. Either pegmatite or Kinsman present.
813				
814				
815	245	Schist		Granular black and white schist, red weathering stain.
816				
817	246	Schist		Lots of sillimanite in schist.
818				
819	247	Kinsman		Kinsman intrusive (back side of little knob with pines) only a little bit questionably in place (?).
820				
821				
822	248	Schist		
823				
824	249	Schist		(Occurs as a face, large, by a series of benches) (Orientation of face-N78E). Weathers a light unruined orangish brown.
825				
826				
827	250	Schist	N47W,71NE	Possibly out of place.
828				
829	251	Schist		Schist possibly out of place uncertain of exact location.
830				
831	252	Schist	N65W,75SW	Questionable outcrop. Outcrop of schist, with quartz-rich layers? Samples 252.1, 252.2 taken. Also areas of black white schist (biotite/quartz layers. )
832				
833				
834	253	Kinsman		Station above wier. Outcrop occurs in Canyon Brook and weathers a deep rusty-red. Samples 253.1 (Kinsman), 253.2 (Kinsman), 253.3 (Kinsman), 253.4 (Kinsman) taken. Tectonized Kinsman (has a definite fabric).
835				
836				
837				
838	254	Kinsman		Station above wier 12 at east branch of Zig Zag brook. Kinsman diorite (?). Samples 254.1, 254.2, 254.3 taken.
839				
840				
841	255	Kinsman		Large rounded knob off road coming out of wier 12. Questionable outcrop. Samples 255.1, 255.2 taken. Strongly tectonized Kinsman (?). Black/white rock lots of quartz & biotite. Large phenocrysts of Kinsman are seen in outcrop on end close to the road.
842				
843				
844				
845				
846	256	Kinsman		Outcrop in road-cut, Kinsman, questionably in place. Sample 256 taken. Lots of biotite in a fabric orientation.
847				

	A	B	C	D
1	Station Number	Lithologies	Foliation Orientations	Notes
848				
849	257	Kinsman		More Kinsman (??) that looks like station 256. Outcrop just off road by junction. Outcrop is questionable. Sample 257 taken.
850				
851				
852	258	Kinsman		Little bench in Canyon Brook. Kinsman (?). Samples 258.1, 258.2 taken. Fracture face dripping with water, so did not attempt to record.
853				
854				
855	259	Kinsman		Kinsman intrusive, outcrop forms another bench in Canyon Brook and Brook bottom for a ways. Nice large phenocrysts of calcite (?)feldspar are visible, tonalite (?), lots of biotite. Sample 259 taken
856				
857				
858				
859	260	Schist	N60E,81SE	Rubble and sheared rock occurs in fault zone. Sample 260.4 comes from very close to the fault zone. 260.2, 260.3 altered Kinsman (?) or Rangely (?). Rusty water is weathering out of fault zone. Area appears to be schist-Upper Rangely. Slickensides(?) orientation: N25E,60SE, with a rake of 51NE. Plane N35E,59SE with a rake of 50NE. Fault zone orientation: N35E (roughly). Apparent width: 8.6m. Outcrop occurs where Canyon Brook cuts a canyon into bedrock.
860				
861				
862				
863				
864				
865				
866				
867	261	Kinsman		Outcrop is very questionably in place. Kinsman intrusive.
868				
869	262	Schist	N46E,59SE	Foliation orientation N37W,79NE might not be foliation but fractures.
870			N37W, 79NE	
871			N12E,86NW	
872				
873	263	Schist 100%		Outcrop occurs at tall waterfall in Canyon Brook (may be 12'). Fault moullions rake NE74 on a fault place (or at least fracture plane) of . N26E,66SE. Outcrop is schist
874				
875				
876				
877	264	Schist		Schist, could be tectonized Kinsman. Sample 263 (mislabelled).
878				
879	265	Schist		Schist with lots of big sillimanite crystals and grungy looking schist. Sample 265.1, 265.2. Rock still look rubbledized to a degree.
880				
881				
882	266	Schist		Very fine, hard granular schist where Canyon Brook makes a long drop over bedrock. Samples 266.1 and 266.2 taken. Foliation orientation is hard to determine, rock is well fractured.
883				
884				
885				
886	267	Schist		
887				
888	268			Highly tectonized Kinsman or schist (?). Sample 268 taken.
889				
890	269	Schist		Similar looking. Schist. Little iron staining, but still possibly more fractured than usual.
891				
892				
893	270	Schist		
894				
895	271	Kinsman		Outcrop of Kinsman in Canyon, weathers to a rusty red weathering color. Sample 271.1 taken 271.2.
896				
897				
898	272	Kinsman(?)		Kinsman (?) highly tectonized (?). Outcrop is questionable. Samples 272.1; 272.2.
899				
900				

	A	B	C	D
1	Station Number	Lithologies	Foliation Orientations	Notes
901	273	Kinsman		Kinsman, weathers a light layer of rusty red. Sample 273
902				
903	274	Kinsman		Outcrop of Kinsman, occuring at waterfull in Canyon Brook. Sample 247.1, 274.2 (Quartz dike). Roughly N20E,45Se with a thickness of .22m. Fracture face (1) N68E,47NW. 0.35x.35 face (triangular shped) abuts fractures (2) and (3). Fracture (2) traceable for 2.27m ends blind on northern end after making a curve to the west. 0 .28mm – aperature. Fracture (3) N28W,67SW traceable for about 2.7m whereupon it disappears into soil. 0.50 mm aperature.
904				
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910				
911	275	Kinsman		Kinsman, grading very interestingly into a more tectonized form. Samples 275.1, 275.2, 275.3
912				
913				
914	276	Kinsman		Sample 276
915				
916	277	Kinsman		Kinsman outcrop in W. fork of Brook.
917				
918	278	Kinsman		Kinsman where Brook almost touches trail. Samples 278.1 and 278.2
919				
920	279	Kinsman		Are the zones in Cascade Brook, which I had been calling metapsammites (light tan with little red garnets) really fingers of Kinsman? Sample 279.1 grades directly into samples. definitely Kinsman 279.2 and 279.3. Outcrop occurs in brook 10' away from trail.
921				
922				
923				
924				
925	280	Schist		Very questionable outcrop. Schist. Small samples 280.1 and 280.2
926				
927	281	Schist	N29E,56SE	Good outcrop of schist, occurs where brook has bent south of trail and creates a little waterfall in Brook. Sample 281.2 taken granular sachist (?) or pegmatite (?) occuring on northern edge of outcrop
928		Pegmatite (?)	N16E,69SE	
929			N6W, 66SE	
930				
931	282	Kinsman		5' – 10' up stream from 281. Kinsman intrusive. Sample 282 collected.
932				
933	283	Kinsman		Kinsman Intrusive. Sample 283 collected. Outcrop occurs as a fall in the brook (steep drop not a waterfall) –badly tectonized in mid-part.
934				
935				
936	284	Kinsman (??)		Very questionabe outcrop occurs at the top of steep drop in Brook. Samples 284.1, 284.2 and 284.3 tectonized Kinsman (??) or Rangely *****qtz boudins.
937				
938				
939				
940	285	Kinsman		Outcrop occurs as pour over of little brook over pavement (very small area). Questionable outcrop. Sample 285 collected. Kinsman Intrusive.
941				
942				
943	286	Schist	N41W,79NE	Where west fork of the Canyon Brook meets rain-gauge road. Samples 286.1, 286.2, 286.3, and 286.4
944			N40W,83NE	
945			N34W,59SW	
946				
947	287	Schist		Outcrop slightly questioanlbe. Sample 287 collected. Outcrop occurs just south of road, as a bench. Large sillimanite crystals present.
948				
949				
950	288	Schist		Pavement at rainguage 20 (just to the E, in the clearing) Glacial striations: S39E, S39E, S40E, S38E, S41E. 2 samples of 288.
951				
952				
953	289	Schist (?)		Outcrop of schist in middle road. Glacial striations: S46E, S45E, S46E,

	A	B	C	D
1	Station Number	Lithologies	Foliation Orientations	Notes
954				S45E, S41E, and S48E
955				
956	290	Kinsman		Altered ? Kinsman Intrusive occurs in first small elevation drop, in the middle of the East Fork of Zig-Zag Brook, has a golden color to it, high muscovite (?) content, well fractured (?) Sample 290 collected.
957				
958				
959				
960	291	Kinsman		Outcrop occurs as a waterfall in brook. Kinsman. Sample 291 taken but also, more golden color examples also here (as in 290). Large 15 yds x 2 1/2' high(est). Uncertain as to how fracture ends. Fracture face N42E,87NW
961				
962				
963				
964				
965	292	Schist	N11E,52SE	Schist outcrop on road for rain-guages, occurs as road cut, and outcrop is questionable. Sample 292.
966				
967				
968	293	Rangely Schist	N35E, no dip control	Outcrop at rain gauge #15, occurs as pavement, Schist, glacially scarred.
969			(Good control on strike).	Glacial striations: S44E, S53E, S42E and S44E
970				
971	294	Schist	N46E,74SE	Outcrop of schist, glacially smoothed. Big sillimanite crystals weathering out (1/4" –1/2" est.)
972				
973				
974	295	Schist		Outcrop of schist in road and along road cut. Glacial striations: S36E, S36E, S37E, S31E, S37E, S34E and S37E. Makes a nice fracture pattern.
975				(1) N44W,72SW. Aperature – whatever blade is between .4mm and .33 mm on the feeler guage (3 rubbed off)
976				
977				
978				
979				(2) N4W, steeply dipping but no control. 0.33mm aperature.
980				(3) N4W,76E . 2.55m traceable (abuts (1), dissappears into soil).
981				
982	296	Schist (?)		Very questionable outcrop. Samples 296.1, 296.2, 296.3 schist (?), and
983		Kinsman		296.4 Kinsman. Rangely schist interfingered with Kinsman intrusive??
984				Outcrop occurs near road (?)blue trail to rain guage #16.
985				
986	297	Schist		Outcrop in road going to #16. Outcrop is questonable. Sample 297
987				
988	298	Kinsman (?)		Outcrop occurs as surface in the road. Very questionalbe outcrop.
989				
990	299	Kinsman (?)		Very questionable outcrop in middle of road. Too smooth a surface to sample
991				
992	300	Schist		Questionable outcrop. Schist, with quartz boudins (?) Sample 300. On steep
993		Quartz Boudins (?)		slope west of blue trail.
994				
995	301	Schist	N63E,65SE	Little fall by end of road (Zig-Zag Brook). Samples 301.1 and 301.2.
996			N60E,62SE	
997				
998	302	Kinsman(??)		Little rock outcrop where banks of brook get steep (on E side of brook).
999				Sample 302 tectonized Kinsman (??). Outcrop is questionable.
1000				
1001	303	Schist		Opposite side of Brook as 302. Appears as a vetical face of rock maybe 10'
1002		Pegmatite		high. Samples 303.1 and 303.2. Little pegmatite dike intruding schist.
1003				
1004	304	Schist		Outcrop at water fall and cliff on eastern side. Beautifully pin-striped schist.
1005				Samples 304.1 and 304.2. Locally convoluted folds and ptygmatic folding
1006				on a small scale. Foliation appears to be sub-horizontal but no good reading

	A	B	C	D
1	Station Number	Lithologies	Foliation Orientations	Notes
1007				obtained.
1008				
1009	305	Schist	N49W,90	Outcrop occurs as a face at bottom end of a steep (small) pine covered ridge where Zig Zag Brook has cut into ridge. Schist, lots of feldspar/qtz/biotitie/muscovite which is well separated and well foliated, weathers a grungy brown and rusty-red weathering is common but not prevalent. Sample 305 collected. 305.1 grungy brown example which is common.
1010			N4W,86E	
1011			N42W,90 (good control)	
1012				
1013				
1014				
1015	306	Kinsman (??) or Gniessic Schist (??)		Tectonized Kinsman (??) or Gniessic Schist (??). Did not get recorded on map. Samples 306.1 and 306.2. Outcrop is questionable.
1016				
1017				
1018	307	Schist	N21W,85NE	Outcrop occurs at confluence of eastern limb of Zig-Zag Brook and a pretty good sized little brook coming in from the east, travelling west, outcrop is in place and is schist. Sample 307
1019			N27W,82SW	
1020				
1021				
1022	308	Schist		Granular schist. Samples 208.1 and 308.2 Outcrop occurs as a surface on west bank of Zig-Zag Brook.
1023				
1024				
1025	309	Schist		Schist outcrop in brook. Sample 309. Lots of very bit garnets (1/4" diameter est.). Samples 309.2 and 309.3 taken.
1026				
1027				
1028	310	Schist	N11W,90 (excellent contro	Outcrop occurs where brook has cut into E. bank of a little knoll, excellent exposure. Schist is exposed showing good foliation development and good separation of quartz/feldspar from micas.
1029			N12W,87NE	
1030				
1031				
1032	311	Schist ?		Questionable outcrop fingers of Kinsman in schist? Samples 311.1, 311.2, 311.3, and 311.4.
1033				
1034				
1035	312	Schist	N26E,80SE	Schist, outcrop is very questionable.
1036				
1037	313	Schist	N8W, 76NE	Excellent outcrop all the way up steep slope. Schist. Large garnets, high sillimanite content, grungy brown weathering color.
1038				
1039				
1040	314	Schist	N8W,76NE	(a few yards downstream). Schist, lots of garnet
1041				
1042	315	Schist	N16E,82SE	Schist, lots of bit garnets (3/4" in diameter est.). Foliation roughly as noted.
1043				
1044	316	Kinsman		Metal stake, drove into boulder next to outcrop. Outcrop of Kinsman Intrusive occurs in Zig-Zag Brook, after 2nd small fall, but stream is dominated by boulders of Kinsman for some ways up. Sample 316. Big white feldspar crystals present. Intrusive pegmatite dikes can be seen cutting later stage Kinsman dikes?
1045				
1046				
1047				
1048				
1049				
1050	317	Kinsman		Outcrop at 3rd and largest fall, tectonized Kinsman.
1051				
1052	318	Kinsman		Outcrop of kinsman in Zig-Zag Brook. Large white feldspar phenocrysts. Huge white quartz crystal in stream.
1053		Feldspar		
1054				
1055	319	Kinsman		Kinsman exposed by brook cutting into bedrock.
1056				
1057	320	Kinsman		Kinsman in road-cut, looks pretty good but is questionable.
1058				
1059	321	Kinsman		Questionable/Kinsman outcrop.

	A	B	C	D
1	Station Number	Lithologies	Foliation Orientations	Notes
1060				
1061	322	Schist		Textbook examples of glacial striations in ditch on W side of road, best ones I've ever seen. Schist with fingers of Kinsman exposure of about 40'.
1062		Kinsman		Glacial striations: S45E, S47E, S41E and S43E. Contact between Kinsman and Rangely is diffuse and interfingering.
1063				
1064				
1065				
1066	323	Schist		Kinsman (tectonized) (?) or Rangely (?) I'm calling it Schist. Sample 323 taken.
1067				
1068				
1069	324	Kinsman		Tectonized Kinsman ? or Rangely schist ? Calling it Kinsman. Sample 324 taken. Outcrop is questionable.
1070				
1071				
1072	325	Schist		Kinsman or Rangely? I'm calling it schist. Sample taken.
1073				
1074	326	Rangely Schist		Outcrop questionable. Kinsman or Rangely? I'm calling it Rangely Schist. Sample 326.
1075				
1076				
1077	327	Schist (Rangely)		Rangely or Kinsman? Sample 327.
1078				
1079				
1080				
1081	328	Rangely Schist		Rangely or Kinsman? I'm calling it Rangely Schist with a little bit of Kinsman intruding it. Sample 328.
1082				
1083				
1084	329	Tectonized Kinsman		Tectonized Kinsman ? or Rangely? I'm calling it Tectonized Kinsman. Sample 329.
1085				
1086				
1087	330	Kinsman Intrusive		Sample 330.
1088				
1089	331	Kinsman (?)		Sample 331.
1090				
1091	332	Kinsman (?)		Sample 332.
1092				
1093	333	Kinsman		Sample 333.
1094				
1095	334	Kinsman ??		Sample 334. Continuous with 333.
1096				
1097	335	Kinsman ??		Sample 335. Continuous with 334.
1098				
1099	336	Kinsman?		From East to West. Sample 336.1, 336.2 and 336.3.
1100				
1101	337	Kinsman?		Sample 337.
1102				
1103	338	Concord Granite		Sample 338.
1104				
1105	339			Rubbledized zone. Continuation of fault zone? Orientation (Roughly): N49E
1106				
1107	340	Kinsman ?		Highly drawn out Kinsman ?? or Rangely?? From E to W. Samples 340.1 and 340.2
1108		Rangely ?		
1109				
1110	341	Rangely ?		Sample 340.3
1111				
1112	342	Rangely		Rangely in contact with Concord Granite.

	A	B	C	D
1	Station Number	Lithologies	Foliation Orientations	Notes
1113				
1114	343	Kinsman ?		Highly drawn out Kinsman or Rangely ? Pseudotachylite (sp?) developed.
1115		Rangely ?		Slickenside orientations: N21E, 79 SE. 85 degree raken opening to the NE.
1116				Outcrop is questionably in place. Sample 343 collected.
1117				
1118	344	Kinsman?		Highly tectonized Kinsman ?? Sample 344 collected.
1119				
1120	345	Kinsman		Tectonized Kinsman ?? Sample 345 collected.
1121				
1122	346	Rangely Schist ?		Sample 346.
1123				
1124	347	Kinsman Intrusive		Kinsman Intrusive. Outcrop questionable (but not lithology).
1125				
1126	348	Kinsman Intrusive		Inplace Kinsman Intrusive.
1127				
1128	349	Kinsman		Kinsman fairly undeformed.
1129				
1130	350	Kinsman		Outcrop of Kinsman intrusive, good igneous texture, large (alcid?)
1131				Feldspar phenocrysts in ground mass, occurs in Hubbard Brook where
1132				brook first gets a little steep since bridge.
1133				
1134				
1135				
1136	351	Kinsman Intrusive		Big outcrop of Kinsman Intrusive creates big waterfall in brook. Major
1137				N32E,54NW. Fractures orientations: N14E,76SE; N27E, 87SE; N55E,
1138				60SE; N21E,76NW; and N19E,65SE. Outcrop appears to be fairly
1139				homogeneous Kinsman. Constant outcrop for a hundred yards est.
1140				
1141	352	Kinsman		Outcrop of Kinsman Mafid (?) dike cutting Kinsman, was hard to sample
1142				because in about a foot of water. Sample 352 taken. Orientation:
1143				N24E, 84 NW (very rough). Thickness: about a foot and 1/2 thick est.
1144				
1145	353	Kinsman Intrusive		Orientation of fractures: N24E; N17E; N84W (.33 mm aperature); N62E.
1146				No other measurements possible. Sample 353.
1147				
1148	354	Kinsman ?		0.08 m thick dike of Kinsman intruding earlier, tectonized Kinsman??
1149				N34E, shallow dip to the SE. Ground rock is fine grained high biotite
1150				material, but still appears to have white feldsic phenocrysts.
1151				
1152	355	Kinsman		Dark tectonized Kinsman ??, pegmatite or Kinsman, large quartz area.
1153				Fractures have reprecipated on mineralized ground rock, because appear as
1154				white streaks. Fractured zone N1E, 58E. Samples 355.1, 355.2, 355.3,
1155				355.4, 355.5 (came from dark area), and 355.6.
1156				
1157	356	Kinsman		Large outcrop surface more high biotite content, highly tectonized?, fine
1158				grained Kinsman? Samples 356.1, 356.2, and 356.3.
1159				
1160	357	Kinsman		More tectonized Kinsman (?) Samples 357.1, 357.2 and 357.3. Mafic
1161				(basaltic?) dike. Sample 357.4 Orientation: N52E,81NW. Thickness: 0.50m
1162				thick. Strong fracture semi-parallel to dike. Orientation: N50E,81NW.
1163				
1164	358	Kinsman (?)		Large surface area outcrop. More of this finegrained, high biotite content,
1165				tectonized Kinsman (?) Sample 358.1. Rock is well fractured, fractures

	A	B	C	D
1	Station Number	Lithologies	Foliation Orientations	Notes
1166				form ridges in rock, pressure solution ? has increased resistance to fractures
1167				on rock. Within about a 2 ft distance maybe 20 some fractures cut area,
1168				generally trending: N37W (lots in this orientation). Pods of white
1169				coarse grained Kinsman can be seen intruding darker rock. Fracture:
1170				N20E,85SE, face disappears into rock where it becomes a ridge.
1171				Dike of Kinsman?: 0.03m thick traceable to many yards. N44E,171SE
1172				Sample 358.2. So tectonized (?) in spots turns to a green glassy looking rock.
1173				
1174	359	Schist or		Dike of Kinsman outcrops again: N48E.71SE. Rock still very well fractured
1175		Tectonized Intrusive		trending: N26W,61SW; N46W, N47W, N36W, no control. Most frequent
1176				orientation: N47W. Lithology: Schist or tectonized intrusive, I can't tell.
1177				Samples 359.1, 359.2.
1178				
1179	360			Rock is still well fractured but not nearly as bad. Rock samples Schist or
1180				Kinsman?? Samples 360.1, 360.2, 360.3, 360.4, 360.5, 360.6, 360.7,
1181				360.8. Rock has a fabric which trends: N65E,39SE. Very large surface
1182				exposure of outcrop. There are dikes (lighter color) which cut rock: N20E,
1183				dipping to the SE. 0.18m thick.
1184				
1185	361	Kinsman		Nice linear dike NS3W, maybe 0.2m thick (est.) (it's in pool).
1186				Kinsman (??)samples 361.1 and 361.2.
1187				
1188	362	Kinsman Intrusive		Sample 362. 0.18 m; N69W. Light colored dike, pegmatite? Glacial
1189				striations: S32E, S36E, S22E, S35E and S38E.
1190				
1191	363	Kinsman Intrusive		Kinsman intrusive, big white phenocrysts of plag (?) Still has mottled
1192				appearance though (when broke). Glacial striations: S55E, S37E, and S34E.
1193				
1194	364	Kinsman		Outcrop of Kinsman in brook.
1195				
1196	365	Schist??		First outcrop coming up Bagely Trail Brook. Outcrop is questionable.
1197				Outcrop occurs as a couple of pur-overs in Brook. Schist (??) or tectonized
1198				intrusive looks more like schist on surface. Samples 365.1, 365.2, 365.3,
1199				365.4 taken. Fabric orientation (poorly constrained): N62E, no dip control.
1200				
1201				
1202	366	Graphitic schist		Sample 366.
1203				
1204	367	Schist		Schist, with quartz rich layers, samples 367.1, 367.2, 367.3.
1205				
1206	368	Schist	N11E,87NW	Schist with high sillimanite content. Outcrop occurs as a big surface in brook
1207			N19E, 90	Sample 368. Whispy texture to foliation. striping. Pod of Kinsman? or
1208				pegmatite?
1209				
1210	369	Schist	N9E,88SE	Small pod of Kinsman? (2' in diameter) Schist occurs in well separated
1211			N9E,87SE	layers about an inch or less thick and continuous for long lengths.
1212			N8E,90	
1213				
1214	370	Schist	N85E	Outcrop of large surface area. Schist intruded by large fingers of Kinsman
1215		Kinsman		(the intrusive is maybe 6' x 13' est.) Kinsman 35%, PMF 65%. Shallow
1216				dip to the north. And in bank of brook outcrop is mostly Kinsman,
1217				containing xenoliths of schist.
1218				

	A	B	C	D
1	Station Number	Lithologies	Foliation Orientations	Notes
1219	371	Schist		Covered with a rusty red weathering coating.
1220				
1221	372	Schist	N55E,77SE	Schist?? purplish weather staining. Samples 372.1, 372.2, 372.3.
1222				Orientation poorly constrained.
1223				
1224	373	Schist	N37E	Sample 373, poorly foliated.
1225				
1226	374	Schist	N34E,85SE	All the schist (?) in this brook has a very massive quality to it. Glacial
1227			N44E,66SE	striations:S15E, S18E, S163, S26E, S23E, and S16E. Little rust staining,
1228			N32E,85SE	massive wispy texture.
1229				
1230	375	Schist	N37E,89NW	Looks grainy, well separated ***** Little brook has cut directly into
1231			N26E,89NW	bedrock.1" - 2" layers but still masive looking. Sample 375.
1232				
1233	376	Schist	N40E,81SE	Schist little iron stained grainy, wispy quality. Glacial striations: S28E,
1234			N37E, no dip control	S273, S30E, S34E, S34E, S30E.
1235				
1236	377	Schist	N42E, steeply dipping	
1237				
1238	378			Outcrop occurs as a large cliff face maybe 13' high and extends down ridge.
1239				Clean milky white Gniessic schist or tectonized Kinsman ?? Samples:
1240				378.1, 378.2, 378.3, 378.4, 378.5; all mislabeled as 378.1. Outcrop is
1241				very homogeneous, no observable foliation at surface, no layering or
1242				separation of constituents. Most fractures are sub-horizontal. Fracture Face 1
1243				abuts fractures 2 and cuts 3 but continues on as an open face (1')?.
1244				Orientation: N35E, 86 SE. Aperature: Feeler gauge size between .33 and
1245				.40mm (# worn off). Size: 4.9 x .6m. Fracture 2 continues until it can't be
1246				followed. Orientation: N35E, 31Se. Aperature: .5mm. Size: 11.7m long.
1247				Fracture 3 abuts fracture 2 and splays off at NE end into other fractures.
1248				Orientation: N20W,5NE. Aperature: ****. Size 5.6 x .15m Fracture 4
1249				splays and ends blind SW end continues. Orientation: Sub horizontal.
1250				Aperature: .96mm. Size: 6.6m long. Fracture 5 Orientation: N22W,51NE.
1251				Aperature:*****. Size: 9 1/2" (est.)
1252				
1253	379	Schist		Outcrop occurs as a steep wall of rock exposures for good distances.
1254				Grainy, somewhat massive schist.
1255				
1256	380	Schist		This whole drainage and this ridge shows up best on color map ( metric
1257				*** by Cornell). Lots of sillimanite, fair separation of constituents.
1258				Micaceous, well foliated. Sample 380.
1259				
1260	381	Schist		Schist, sillimanite weathering out of rock in large crystals (1/4" - 1/2").
1261				Quartz vein cutting schist or Boudin?
1262				
1263	382	Pegmatite		Pegmatite pods and dikes intruding massive, little foliated schist. One of the
1264				dikes is perhaps 2 1/2' thick, subhorizontal. Sample 383 (mislabeled).
1265				
1266	383			Fault? makes strong linear on topo map also. Pseudotachylite (?) developed
1267				on rock surface (the whole face is black) with poorly developed striations.
1268				Orientation questionable: N41E,80SE with a rake of 51 degrees opening to
1269				the NE. Sample labled 383.
1270				
1271	384	Schist	N24E,75SE	Outcrop in Falls Brook below road. Micaceous schist with lots of red iron

brook-map.xls1HUBBARD BROOK MAP-STATION DATA

	A	B	C	D
1	Station Number	Lithologies	Foliation Orientations	Notes
1272			N40E,81SE	oxide covering weathered surfaces and not pin-striped. Somewhat grainy texture to schist.
1273			N39E,76SE	
1274			N37E,67SE	
1275				
1276	385			No outcrops occur in Boulder Brook (called Bounder Brook because it is littered with till boulders, randomly disposed. Or the next one east.
1277				
1278				
1279	386	Schist	N45E,90	
1280			N64E,89SE	Outcrop occurs at the top of the W. hill, it is a little rounded knob. Schist is grungy tan-red schist with biotite, quartz, garnets and sillimanite. Sample 386. PMF
1281			N50E,90	
1282				
1283	387		N31E,71SE	
1284				PMF Samples 387.1 and 387.2
1285	388	Quartzite		
1286				
1287	389	Pegmatite	N90E,77N	
1288				Samples 389.1 and 389.2. Pegmatite pods present. Perry Mtn.
1289	390		N53E,87SE	
1290				
1291	391	Schist	N76W,68NE	
1292			N48W,81NE	Schist, foliation thrown into Chevron folds in places. Foliation orientation looks to be highly variable. Schist is pin-striped. Sample 391
1293				
1294	392	Schist	N49E,75NW	
1295			N58E,69NW	
1296			N56E,70NW	Well foliated schist (poorly developed to fair pin-striping)
1297				
1298	393	Schists		
1299		Quartzite		
1300		Pegmatite		Outcrop occurs as a vertical cliff right before the top of the hill. Beautifully pin-striped schist, quartzites ? and pegmatite pods cutting rock, with a huge quartz crystal in it, maybe 2' x 2'. Sample 393.1 (quartzite) and 392.2. Convoluted folds developed in schist. Well developed fracture faces oriented *****.
1301				
1302				
1303				
1304	394	Kinsman		Highly strung out Kinsman? Sample 394 collected.
1305				
1306	395	Kinsman		
1307				
1308	396	Kinsman		Fairly undeformed Kinsman.
1309				
1310	397	Kinsman		
1311				
1312	398	Kinsman		Deformed Kinsman. Well developed fabric.
1313				
1314	399			
1315				
1316	400	Kinsman		Sample 397.
1317				
1318	401	Schist		
1319				
1320	402	Schist		Sample 398 collected.
1321		Pegmatite		
1322				
1323	403	Kinsman		
1324				Pegmatite coming into Kinsman? Sample 399 collected.
				Sample 400.
				Sample 401.
				Schist with pegmatite intruding, high muscovite. Content well foliated. Samples 402.1, 402.2, and 402.3 (intrusive pod?).
				Outcrop is only slightly questionable. Sample 403.

	A	B	C	D
1	Station Number	Lithologies	Foliation Orientations	Notes
1325	404	Kinsman		Collected by Scott, up eastern branch of Kineo Brook.
1326				
1327	405	Kinsman		Kinsman intrusive collected at confluence.
1328				
1329	406	Kinsman		Small outcrop of Kinsman.
1330				
1331	407	Kinsman		
1332				
1333	408	Kinsman		Tectonized Kinsman, creating a small waterfall in Kineo Brook
1334				
1335	409	Kinsman		Outcrop of Kinsman in canyon slope.
1336				
1337	410	Kinsman		Small outcrop of Kinsman.
1338				
1339	411	Kinsman		Nicely exposed Kinsman, definitely Kinsman, but contains little mafics, very little biotite present, anhedral Feldspar crystals and a good size fraction of quartz. Not tectonized.
1340				
1341				
1342				
1343	412	Kinsman		Tectonized kinsman.
1344				
1345	413	Kinsman		Small outcrop of kinsman.
1346				
1347	414	Kinsman		Questionable outcrop of Kinsman.
1348				
1349	415	Kinsman		
1350				
1351	416	Kinsman		Outcrop of Kinsman which forms a little bench in brook Brook should be split here.
1352				
1353				
1354	417	Kinsman		Channel flowing directly on bedrock.
1355				
1356	418	Kinsman		Questionable outcrop.
1357				
1358	419	Kinsman		Outcrop of Kinsman.
1359				
1360	420	Kinsman		
1361				
1362	421	Kinsman		Large outcrop of Kinsman in the brook and forming a knob on east side of brook, tectonized and of variable composition. Outcrop is highly variable high biotite content Kinsman on western side of contact bordering, quartz rich sections on east side, which has tourmaline crystals weathering out on surface, and possible inclusions of schist.
1363				
1364				
1365				
1366				
1367				
1368	422			High biotite content and quartz content to well foliated Kinsman.
1369				
1370	423	Kinsman		Not so badly deformed Kinsman. Quite a bit of feldspar, outcrop is questionable.
1371		Feldspar		
1372				
1373	424			Kinsman cut by later stage (?) dikes and pods of pegmatitic Kinsman.
1374				Pegmatitic Kinsman contains lots of large white feldspar, with tourmalines and biotite/
1375				
1376				
1377	425	Kinsman		Nice outcrop of Kinsman in brook. Brook has cut directly into bedrock

	A	B	C	D
1	Station Number	Lithologies	Foliation Orientations	Notes
1378				exposing Kinsman with a spotted texture in brook (white Feldspar against the darker biotite).
1379				
1380				
1381	426	Kinsman		Stream carving channel into bedrock of Kinsman fair-lightly deformed, forming a little canyon.
1382				
1383				
1384	427	Kinsman		Well foliated Kinsman, Fabric trends: N16E,88SE; fault plane: N4W,80E. Striations with a rake of 75 degrees opening to the south.
1385				
1386				
1387	428	Kinsman		
1388				
1389	429	Kinsman		
1390				
1391	430	Kinsman		
1392				
1393	431	Schist		Questionable outcrop of Schist. Loss of Schist in drift.
1394				
1395	432	Schist	N17E,32SE	Schist, massive unfoliated micaceous Schist to beautifully pin-striped schist. Good Gulch to observe the difference between foliated Kinsman and the Schist (upper Rangely?) - rusty weathering color.
1396				
1397				
1398				
1399	433	Schist		Sillimanite, muscovite, feldspar? Schist with minor biotite and quartz.
1400				
1401	434	Schist		Grungy poorly foliated schist.
1402				
1403	435			Schist with pod of pegmatite or mafic poor Kinsman?
1404				
1405	436	Schist		Massive poorly foliated Schist-- no rusty weathering stain.
1406				
1407	437	Schist		Massive poorly foliated schist., foliation too poor to obtain orientation. Photo 1 taken here looking N-NE.
1408				
1409				
1410	438	Schist		Massive Schist.
1411				
1412	439			Channel cuts down into bedrock. Mylonite (?) massive homogeneous matrix of nothing but green-blue crystals, other sections of this little outcrop have Schist (?) that is just packed full of Goethite, rocks are rubblized. Shear zone? orientation N30E??
1413				
1414				
1415				
1416				
1417	440	Schist	N2E,64E	Granular Schist weathered brown.
1418				
1419	441	Schist		Schist with little crystals or pockets of a very dark bright green mineral. Tremolite? Actinolite? Set in a light gray ground mass of quartz and feldspar and other minerals? Outcrop still occurs in little canyon cut by the brook.
1420				
1421				
1422				
1423	442	Schist	N37E,56NW	Well foliated black/white schist, almost completely biotite and quartz.
1424				
1425	443	Schist		Granular schist, pink feldspar (orthoclase?), biotite and quartz.
1426				
1427	444	Schist		Poorly foliated grungy looking schist, possible hydrothermal alteration muscovite, feldspar (orthoclase?) Poor foliation quartz, biotite. Upper Rangely ?
1428				
1429				

	A	B	C	D
1	Station Number	Lithologies	Foliation Orientations	Notes
1430				
1431	445	Schist		Poorly foliated tan colored schist.
1432				
1433	446			Grainy feldspar, quartz, mica schist,hydrothermally altered.
1434				
1435	447		N23W,48NE	Pin-striped schist, rock is mostly biotite and quartz, beautiful pin-stripes.
1436				
1437	448			Very grainy, biotite, quartz, feldspar rock, schist or tectonized Kinsman??
1438				
1439	449			Kinsman or Schist?; feldspar (white), biotite, tourmaline and a few nice large red garnets.
1440				
1441				
1442	450	Schist	Variable	Large Sillimanite ? crystals; they are the color of pencil lead. Pinstriped schist, of massive texture. The minerals inside pinstripes aren't discernable because so fine grained. Rock is a gray/white color. Calc-silicate boudins?? present.
1443				
1444				
1445				
1446				
1447	451	Kinsman?		Highly tectonized Kinsman?? Granular black white rock, foliated feldspar and biotite.
1448				
1449				
1450	452	Kinsman		Foliated Kinsman. Contact was put in between Station 450 and 451, but is very elusive, there is good control due to the amount of outcrop but they grade into each other from foliated Kinsman to altered, granular Schist.
1451				
1452				
1453				
1454	453	Kinsman		Fine grained granular Kinsman? Minerals are mostly biotite and Feldspar and Quartz. Foliated.
1455				
1456				
1457	454	Kinsman		Dike of large grained feldspar (white) and a small amount of mafics cutting more fine grained foliated Kinsman?
1458		Feldspar		
1459				
1460	455	Schist		Piece of hydrothermally altered pin-striped schist within Kinsman.
1461		Kinsman		
1462				
1463	456	Kinsman		Dikes and pods of Kinsman intruding massive gray rock. Aphanitic (due to movement??) Kinsman??
1464				
1465				
1466	457	Kinsman		Intrusive Kinsman? almost looks like concord granite here, fine grained, no large phenocrysts, equigranular muscovite present??? Little biotite.
1467				
1468				
1469	458	Kinsman		Kinsman, very tectonized and possibly hydrothermally altered.
1470				
1471	459	Kinsman		Large mafic dike cutting Kinsman, poor exposure, the dike is much covered. Orientation: N72E,60NW. Size: about 2.07 m wide.
1472				
1473				
1474	460	Kinsman		Tectonized intrusive almost looks like Concord Granite, but am calling it Kinsman. Lots of quartz, fine grained, almost equigranular but quartz grains and a little bit larger grainy texture.
1475				
1476				
1477				
1478	Relationships of streams through this area is very confusing. I mapped in detail the major branch , it was carrying the most water, had a clearly define			
1479	Valley and traceable all the way to the top of the hill. It flows to the confluence of the other well mapped stream, but with little to no stream intervenin			
1480	And it starts in a saddle between 2 peaks. There is another stream to the west of it but contains little to no water in it; *****			
1481	it was dry the majority of the time and did not start at the confluence of the 2 major branches but about 80' north of them. It appears to be in the relatio			
1482	of what they show as the major branch of Kineo Brook but I drew it in to the west. A6PS unit would have to be used to get it exact. Although I'm			

	A	B	C	D
1	Station Number	Lithologies	Foliation Orientations	Notes
1483	pretty certain.			
1484				
1485	461	Schist		Questionable outcrop. Schist grainy, striped schist . Lots of schist in drift.
1486				
1487	462	Schist		Occurs at steep section of draw, water flow completely disappears underground. Schist; biotite quartz, pink feldspar and a fair amount of muscovite. Foliated but grainy. Outcrop is questionable.
1488				
1489				
1490				
1491	463			Outcrop occurs as a large knob on east side of drainage where slope gets steep, outcrop is still questionable. Pin striped biotite-quartz schist?
1492				Sillimanite present?? Very small pegmatite dike cutting across outcrop.
1493				
1494				
1495	464	Kinsman		Tectonized felsic Kinsman, small amount of mafics dominated by potassic (?) feldspar.
1496				
1497				
1498	465	Kinsman		Kinsman, mafic-quartz-white feldspar intrusive.
1499				
1500	466	Kinsman		Foliated, very tectonized kinsman, with dikes (?) of kinsman cutting kinsman, very good outcrop. Brook has cut directly into bedrock.
1501				
1502				
1503	467	Kinsman		Small fault zone. .85 m wide, red iron staining leaching out of rocks, developed within the kinsman. Orientation: N78E.
1504				
1505				
1506	468	.		Stream is on bedrock. Typical Kinsman big feldspar crystals (white) and lots of mafics (mostly biotite). Lots of mafics (mostly biotite).
1507				
1508				
1509	469	Kinsman		Tectonized Kinsman, outcrop is questionable.
1510				
1511	470	Kinsman		Tectonized Kinsman.
1512				
1513	471	Basalt		Very suspect outcrop of Basalt. No orientations possible. Not put on map.
1514				
1515	472	Kinsman		Leucocratic Kinsman?? Heavily intrusive tectonized. Large feldspar crystals 50%, quartz 40%, muscovite? 5%, biotite < 1%. Looks tan, not black-white. Occurs as a little waterfall in brook.
1516				
1517				
1518				
1519	473	Kinsman		Tectonized Kinsman. Massive blocks of loose basalt sitting in brook. (6' x 6' est.)
1520				
1521				
1522	474	Kinsman		Very large basaltic (mafic) dike cutting Kinsman. Poorly exposed drift covers most of the exposure. Thickness: Very approximate 4 m thick.
1523		Basalt		Orientation: (apparent) N56E,41SE.
1524				
1525				
1526	475	Kinsman		
1527				
1528	476	Kinsman		
1529				
1530	477	Kinsman		Kinsman, cut by small dike of whiter (larger feldspar crystals) Kinsman. Brook makes little furrow directly in bedrock.
1531				
1532				
1533	478			Foliated pinstriped rock. Schist?? or just very badly deformed Kinsman.
1534				
1535	479			Kinsman or Schist?? Striping present, foliated very fine grained biotite-

	A	B	C	D
1	Station Number	Lithologies	Foliation Orientations	Notes
1536				quartz-feldspar. Rock weathers a light tan and has a good 2" rind of yellow looking schisty weathering rind, but is black/white in middle.
1537				
1538				
1539				Composition is Kinsman, may be a little muscovite present but stripping and foliation classify it as a schist. Maybe we should put a foliated facies on the map?
1540				
1541				
1542				
1543				Where the Kinsman is so foliated it is a schist and grades imperceptibly into rebulitic schist, which I still do believe rings the valley rims, but may be less here than first assumed.
1544				
1545				
1546				
1547	480			Pinstriped Kinsman or schist?
1548				
1549	481			Pinstriped Kinsman or schist? Weathers to a pink tan, not at all like Kinsman.
1550				
1551	482			Pinstriped Kinsman or schist?, garnets present as well as sillimanite. Schist? Samples photographed.
1552				
1553				
1554	483			Schliern? "raft" structures. Kinsman interfingering schist?? Two photos taken of this.
1555				
1556				
1557	484			Good sized fault zone. Iron oxide leaching out of rocks, quartz smeared into veins and goethite is a major component of the rock. Trending: (roughly) N46E. Has created a good deal of rock flour and clay minerals? in zone. Estimated 50' wide. Glacial striations: S43E, S42E, S46E.
1558				
1559				
1560				
1561				
1562	485	Kinsman		Tectonized nebulitic Kinsman but definitely Kinsman.
1563				
1564	486			Pin-striped schist or kinsman?
1565				
1566	487	Kinsman		Tectonized kinsman.
1567				
1568	488			Mafic dike (very poorly exposed). Thickness: 5.2 m at least.. Orientation: N10W,70SW (measured from a fracture).
1569				
1570				
1571	489			Dike again. Stations 474, 488, and 489 are the same dike and it is trending N70E.
1572				
1573				
1574	490	Schist		Outcrop is very questionable.
1575				
1576	491	Schist		Schist?, muscovite biotite, quartz, feldspar, actinolite?
1577				
1578	492			Schist? or Kinsman?? Schist contains garnets, actinolite?-tremalite?, quartz, biotite, feldspar and a little muscovite.
1579				
1580				
1581	493	Rangely Schist		Upper Rangely schist, massive, well foliated but lacking pin-striping. Schist with lots of muscovite and biotite. Cut by large tabular dike of pegmatitic Kinsman (about 1m thick).
1582				
1583				
1584				
1585	494	Kinsman		Tectonized kinsman, few mafics.
1586				
1587	495	Kinsman		Kinsman intrusive, very light colored almost no mafics present, muscovite?, garnets, quartz and large enhedral feldspar crystals.
1588				

	A	B	C	D
1	Station Number	Lithologies	Foliation Orientations	Notes
1589				
1590	496	Schist		Finely pin-striped micaceous schist, lots of muscovite and biotite.
1591				Weathers to a grungy brown weathering color, outcrop occurs as a little
1592				gorge in the brookl Upper Rangely ?
1593				
1594	497	Schist	N14E,66SE	Well foliated micaceous schist, weathers a grungy brown color.
1595				Upper Rangely?
1596				
1597	498	Kinsman		Quartz rich fingers of Kinsman, equigranular to pegmatitic.
1598				
1599	499			Well foliated micaceous, muscovite-biotite-quartz schist--Upper Rangely.
1600				
1601	500			Mylonite--mylonitized schist?--rock is homogeneous blue-green mineral
1602				similar to that found in Canyon Brook.
1603				
1604	501	Schist		Schist, full of sillimanite, and a dark green mineral, epidote ? lactinolite ?
1605				It's a dark green mineral that occurs in clusters.
1606				
1607	502	Schist		Beautiful waterfall, more of 501
1608				
1609	503	Kinsman		Tectonized kinsman??
1610				
1611	504	Kinsman		Tectonized kinsman??
1612				
1613	505	Kinsman		Kinsman, large white crystals with long black ***** crystals cutting
1614				them.
1615				
1616	506	Kinsman		Tectonized kinsman--outcrop is where brook flowing directly on bedrock
1617				
1618	507	Kinsman		Tectonized kinsman?
1619				
1620	508	Kinsman		Tectonized kinsman. Quartz rich equigranular but foliated, with some more
1621				of those black veins? running through them, looks very mafic, solid black.
1622				
1623	509			Schist?? or tectonized Kinsman??
1624				
1625	510	Kinsman		Tectonized kinsman?, outcrop is questionable.
1626				
1627	511	Schist	N34E,85SE	Schist??, outcrop questionable.
1628			N41E,86SE	
1629				
1630	512	Schist		Questionable outcrop, schist? Could be very tectonized Kinsman but I don't
1631				think so: Massive, granular rock containing actinolite?, garnets, quartz (lots),
1632				feldspar, and biotite.
1633				
1634	513	Kinsman		Tectonized Kinsman, large outcrop
1635				
1636	514	Kinsman		Highly tectonized Kinsman occurs as a large cliff face with rounded knobs
1637				on top. Or schist?? Grades into such fine grained highly micaceous foliated
1638				rock, that I'm calling it a schist, which contains abundant diopside: actinolite.
1639				Many surfaces covered with black surfaces, could be psuedotachylite fault
1640				surfaces or manganese mineralization but I think it could be faulted to bring
1641				mineralization into planes anyway, planes trending: N64E,66SE, fabric

	A	B	C	D
1	Station Number	Lithologies	Foliation Orientations	Notes
1642				foliation is sub-horizontal.
1643				
1644	515	Kinsman		Black surfaces are mineralized fractures and tectonized kinsman.
1645				
1646	516	Kinsman		Granular, diopside? actinolite? rich rock, with large fibrous sillimanite crystals beginning to form. Metamorphosed Kinsman? It seems to me to be a metamorphic rock, and Kinsman. Its indirect contact with Kinsman that is not so badly metamorphosed.
1647				
1648				
1649				
1650				
1651	517	Kinsman		Tectonized kinsman?? grading into more of 516 type rock.
1652				
1653	518			Large outcrop of pegmatite or pegmatitic kinsman, graphitic intergrowths of feldspar and quartz.
1654				
1655				
1656	519	Kinsman		More metamorphosed Kinsman?
1657				
1658	520		N55W,82NE	Metamorphic rock, pinstriped schist (biotite rich, muscovite also present). Schist of the Kinsman formation? metamorphosed kinsman?
1659				
1660				
1661	521	Kinsman		Photo taken looking NE, more metamorphosed kinsman?
1662				
1663	522	Schist		So metamorphosed I have to call it sillimanite? diopside? actinolite?
1664				
1665	523			Metamorphosed kinsman or schist? Outcrop questionable. Pinstriping is well defined, good foliation. Outcrop in steep brook among the pines (thick).
1666				
1667				
1668	524			More metamorphosed kinsman or schist? Same rock as 519-523.
1669				
1670	525			MMK? or schist??
1671				
1672	526			More granular has lots of quartz, and feldspar crystals. Looks more intrusive, but still has diopside? actinolite? present.
1673				
1674				
1675	527			Very Schistose, biotite-quartz-feldspar.
1676				
1677	528			Granular, massive MM, Kinsman?? No observable foliation orientation.
1678				
1679	529	Kinsman		Definitely kinsman, foliated biotite (lots and in large flakes) and quartz plus feldspar, looks very much different than that described above, no specifically metamorphic minerals present.
1680				
1681				
1682				
1683	530	Kinsman		Foliated kinsman.
1684				
1685	531	Kinsman		Kinsman tectonized.
1686				
1687	532	Loms,am		Very normal looking.
1688				
1689	533	Kinsman		Kinsman, cutting large pegmatite or pegmatitic Kinsman dike.
1690				
1691	534	Kinsman		Outcrop occurs as a cliff face of Kinsman against which steep brook is flowing, 2 dikes of pegmatite or pegmatitic kinsman cut the outcrop (sub-vertically).
1692				
1693				
1694				

	A	B	C	D
1	Station Number	Lithologies	Foliation Orientations	Notes
1695	535	Kinsman		
1696				
1697	536	Kinsman		
1698				
1699	537	Kinsman		
1700				
1701	538	Kinsman		Heavily tectonized Kinsman very well foliated.
1702				
1703	539	Kinsman		
1704				
1705	540	Kinsman		
1706				
1707	541	Kinsman		Outcrop occurs as a large (30' high x 100' wide at least) boulder on the east side of steep Brook. The outcrop is a well exposed inchision block ( a large % of the outcrop) surrounded by Kinsman and shot through by pegmatitic Kinsman, Schist upper Rangely(?) micaceous schist which weathers a grungy brown, well foliated
1708				
1709				
1710				
1711				
1712	542			
1713				
1714				
1715	543	Schist	N14W 73NW	Micaceous, has quite a bit of goethite and muscovite; weathers clean' with little to no staining to a tan color. Outcrop occurs as a flaggy rock outcrop in the middle of steep brook. bedding planes present/; some of this is well foliated our units poorly foliated.
1716				
1717				
1718				
1719				
1720	544	Schist	N42W 80NE	Outcrop occurs in steep Brook gorge. Micaceous layers to granular layers
1721			N24W 80NE	
1722				
1723	545			Outcrop occurs on NW foot of knob. Pegmatited dikes and pods, coming into quartzites of the Perry Mountain.
1724				
1725				
1726	546	Schist		Soft (mashes with the blow of a hammer) schist with lots of sillimanite and biotite. Outcrop occurs at the top of the divide; just on the south side. Perry Mtn. foliation is drawn into folds N44W. Glacial striations: S25E; S20E; S21E; S25E; S23E; S20E; S20E; S24E.
1727				
1728				
1729				
1730				
1731	547	Schist	N77E 65NW	Schist with lots of sillimanite garnet and micas. Foliation orientation N77E,65NW although highly folded.
1732				
1733				
1734	548	Schist		Schist actinolite (?) present in the rock.
1735				
1736	549	Quartzites		Quartzites of Perry Mtn.
1737				
1738	550	Schist		
1739				
1740	551	Schist		Schist large sillimanite crystals cutting across a jumbled array of biotite with lesser amounts of quartz and pink feldspar
1741				
1742				
1743	552		N55E 66NW	Concord granite in contact with schist contact orientation is: N48E 45NW. Foliation orientation of schist is N55E 66NW.
1744				
1745				
1746	553		N68E 72NW	Grainy quartz-biotite units bedded withmicaceous units with large crystals of sillimanite biotite actinolite (?)
1747				

	A	B	C	D
1	Station Number	Lithologies	Foliation Orientations	Notes
1748				
1749	554	Schist		Large crystals of mica (mostly biotite) and sillimanite.
1750				
1751	555	Schist		
1752				
1753	556	Schist		Large micaceous sillimanite layers and fine grained biotite. Quartz layers. Sillimanite-biotite layers also have lots of garnet present.
1754				
1755				
1756	557	Schist		Large pavement glacially smoothed with convoluted folds. Sillimanite weathers out as a positive relief feature. Coarse grained sillimanite biotite schist. Fine grained schist.
1757				
1758				
1759				
1760	559	Schist	M42E 82SE	
1761				
1762	560	Schist		
1763				
1764	561		N40E 77NW	Concord granite good sized finger bounded by schists.
1765				
1766	562	Schist		High sillimanite content.
1767				
1768	563	Schist	N74E 62NW	Schist pin-striped to finely laminated massive large garnets present in more randomly oriented large biotite-sillimanite crystal area; convoluted folds developed
1769				
1770				
1771				
1772	564	Schist		Photots taken only good vist available. One looking from divide of Hubbard Brook drainage looking SE into the Pemigawaset (sp?) River . The second one was shot NE into Hubbard Brook drainage although Mirror Lake cannot be seen.
1773				
1774				
1775				
1776				
1777		Pegmatite		Outcrop is a large knob of rock schist cut by pegmatite dikes.
1778				
1779	565	Schist		Upper area appears to be all schist
1780				
1781	566			Concord granite fairly large sized outcrops.
1782				
1783	567	Quartz		Quartz rich zone, Perry Mtn.?
1784				
1785	568	Granite		Concord granite good sized are, pegmatites cutting granite.
1786				
1787	569	Grantite		Contact between Concord and Schist: N30E, subvertical, sharp contact.
1788		Schist		
1789				
1790	570	Schist	N19E, 71SE	Little quartz present.
1791				
1792	571	Granite		Large cliff face trending N25E,84Se (maybe 30" tall) of Concord granite interfingering schist. Most all of this schist is poorly foliated.
1793		Schist		
1794				
1795	572	Schist		Perry Mtn.??
1796				
1797	573	Concord granite		
1798				
1799	574	Schist	N57E, 89SE	Perry Mtn. Fm. Schist/Quartzite. If these are meta-turbidites it would indicate tops to the SE. Two photos taken, heads of hammers are pointed
1800		Quartzite	N67E,84SE	

	A	B	C	D
1	Station Number	Lithologies	Foliation Orientations	Notes
1801			N49E,88NW	north in both. Third picture taken of whole view, without flash, head of hammer pointed north again. Bottom sequence "A": maybe a meta-arkose because of the feldspar present. Meta-turbidites?
1802				
1803				
1804				
1805	575	Perry Mtn. Schist		
1806				
1807	576	Perry Mtn. Schist	N79E,59SE	
1808				
1809	577	Quartz		Large quartz-rich zones.
1810				
1811	578	Quartz		Large quartz-rich zones.
1812				
1813	579		N60E,84NW	Perry Mtn. quartzite schist layers. Outcrop occurs as a large rounded knob of rock.
1814				
1815				
1816	580	Schist	N42E,87NW	
1817				PMF schist
1818	581	Schist	N56E,89NW	
1819				PMF? schist, pegmatite cutting outcrop. Not much quartzite.
1820	582	Schist	N48E,75NW	
1821				
1822	583			
1823				Smoothed knob, pavement developed on Perry Mtn., but stained black, looks like quartzite but hard to get at. Glacial striations: S5ES4E; S2ES4E. May be too weathered to do any good.
1824				
1825				
1826	584	Concord granite		
1827				
1828	585	Concord granite		
1829				Concord granite with block inclusions of Schist (PMF?)
1830	586	Concord granite		
1831				Lots of sub-horizontal fractures.
1832	587	Concord		
1833				
1834	588	Schist		
1835		Concord		Schist with Concord interfingering.
1836				
1837	589	Schist	N41W,89SW	
1838				Schist, large sillimanite crystals weathering out of rock.
1839	590	Schist		
1840				Schist dominated by large biotite flakes, Rangely or Perry Mtn.?
1841				Convoluted folds.
1842	591	Concord granite		
1843				Concord granite, pegmatitic on south end, regular equigranular in center, nebulitic on North end.
1844				
1845	592	Schist		
1846				Grungy black schist with lots of Sillimanite, poorly developed foliation interfingers into concord granite, which comprises most of the outcrop (at least- traceable -for 30" pod). I think schist could be upper Rangely-- football sized Quartz boudin present.
1847				
1848				
1849				
1850	593	Mylonite		
1851				Mylonite?
1852	594	Schist	N41W,87SW	
1853				Black schist?? Micaceous, flaggy appearance.

	A	B	C	D
1	Station Number	Lithologies	Foliation Orientations	Notes
1854	596	Schist	N7W,83SW	
1855				Schist interlayered with quartzite. Layers Upper Rangely?? or Perry Mtn??
1856				Flaggy appearance lots of quartzites(?)
1857	597	Kinsman		
1858				Kinsman (tectonized) nice white-black intrusive. Outcrop occurs as large
1859				rock faces that jut out on the eastern side of canyon at mouth of steep
1860				Brook Gorge, and in brook at mouth of gorge.
1861	598	Kinsman		
1862				Kinsman at confluence of Hubbard and Steep Brooks.
1863	599	Kinsman		
1864				Questionable outcrop of Kinsman in brook.
1865	600	Kinsman		
1866				Kinsman, large feldspar phenocrysts, good igneous texture.
1867	601	Kinsman		
1868				Large porn over in brook where Kinsman crops out
1869	602	Kinsman		
1870				
1871	603	Kinsman		
1872				
1873	604	Kinsman		
1874				Nice large feldspar crystals but not too much mafics.
1875	605	Kinsman		
1876				South of trail.
1877	606	Kinsman		
1878				Fairly fractured (a few little pressure(?) ridges, where fractures can be seen)
1879				Do not seem to be calcaceous.
1880	607	Kinsman		
1881				
1882	608	Kinsman		
1883				Occurs as flat pavement in Hubbard Brook.
1884	609	Kinsman		
1885				Occurs as flat pavement in Hubbard Brook.
1886	610	Kinsman		
1887				
1888	611	Kinsman		
1889				Very tectonized Kinsman with few mafics.
1890	612	Kinsman		
1891				Kinsman in the middle of Hubbard Brook with glacial striations:
1892				S46E; S53E; S55E; S48E; S50E; S46E
1893	613	Kinsman		
1894				Glacially smoothed oucrop of Kinsman in, and on, North bank of
1895				Hubbard Brook.
1896	614	Kinsman		
1897				Outcrop is questionable Kinsman
1898	615	Kinsman?		
1899				Very questionable outcrop of Kinsman.
1900	616	Kinsman		
1901				Kinsman, very weathered. Glacial striations: S45E, S60E, S51E
1902				Poor control.